that of the Phænogamous division, nearly all the species which exist here are enumerated. My search has been diligent, and those yet undetected are probably very few. Of Cryptogamia, most of the mosses, hepatics and lichens have also been collected. Among algæ, there are probably many of the smaller forms still undetected.

Although my attention has been chiefly directed for the last three years to the collection and examination of the fungi, I cannot doubt, from the ease with which new forms are continually added to my collection—the great number of different species which spring up in the same locality in different seasons, (their growth and propagation influenced so much by meteoric changes,)—that the present number may, in the course of time, be very easily doubled.

A large portion of the Cryptogamia of my collection are still undetermined; and, therefore, without giving the genera, I can only approximate to the number of species under each order.

The second paper,

On the numeric combinations of the rings in the formation of the regions of the body of Crustacea; by Professor AGASSIZ.

[Not received.]

The third,

On the influence arising from the discovery of the Gulf Stream upon the commerce of Charleston; by Lieut. M. F. MAURY.

LIEUT. MAURY said, that before the Gulf Stream was known to practical navigators, the course of trade between England and America was such as to make Charleston the half-way house between the mother country and the New-England States, including Pennsylvania and New-York.

At that time, the usual route of vessels bound to America, was to run down on the other side towards the Cape de Verdes, and until they got the N. E. trades, and with them to steer for America. This route brought them upon the Coast of the Southern States, where their first landfall was generally made. Then steering to the northward, they drifted along until they made the Capes of the Delaware, or other headlands to the North.

If now, as it often happened in the winter season, they were dri-

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ven off the coast by snow storms and westerly gales, instead of running off into the Gulf stream, as vessels now do to thaw themselves, they stood back to Charleston, or the West Indies, where they would spend the winter, and wait until the spring before making another attempt.

It should be borne in mind that vessels then were not the sea boats, or the sailers they now are. Lieut. MAURY had the Log-book of a West India trader in 1746. Her average rate of sailing per log, was about one mile the hour.

The instruments of navigation were rude, chronometers were unknown, and lunars were impracticable, and it was no uncommon thing for vessels in those days, when crossing the Atlantic, to be out of their reckoning 5°, 6°, and even 10°. And when it was announced that a vessel might know by consulting the water thermometer, when she crossed the eastern edge of the Gulf stream, and again when she crossed the western edge, navigators likened the discovery to the drawing of blue and red streaks in the water, by which, when the mariner crossed, then he might know his longitude.

The merchants of Providence, R. I., Dr. FRANKLIN being in London, sent a petition to the Lords of the Treasury, asking that the Falmouth packets might run to Providence instead of to Boston; they maintained that though Boston and Falmouth were between Providence and London, yet that practically the two former were further apart, for they shewed that the average passage of the London traders to Providence, was fourteen days less than the packet line from Falmouth to Boston.

Dr. FRANKLIN, on being questioned as to this fact, consulted an old New-England Captain, who had been a whaler, and who informed the Doctor that the London traders to Providence were commanded for the most part by New-England fishermen, who knew how to avoid the Gulf stream, while the Falmouth packets were commanded by Englishmen who knew nothing about it.

These two drew a chart, which was published at the Tower, and the Gulf stream, as laid down there by that Yankee whaler, has been preserved upon our charts until within a few years.

At the time that Dr. FRANKLIN made it known how navigators, simply by dipping a thermometer in the water, might know when they entered, and when they cleared the Gulf stream, Charleston had more commerce than New-York, and all the New-England States put together.

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This discovery changed the route across the Atlantic, shortened the passage from sixty to thirty days coming this way, and, consequently, changed the course of trade also.

Instead of calling by Charleston as they came from England, vessels went direct to the port of their destination; instead of running down to Charleston to avoid a New-England snow storm, they stood off for a few hours, until they reached the tepid waters of the Gulf stream, in the genial warmth of which the crew recovered their frosted energies, and as soon as the gale abated, they were ready for another attempt to make their haven.

In this way the northern ports became the half way house, and Charleston an outside station.

This revolution in the course of trade commenced about 1795. It worked slowly at first, but in 1816–17, it received a fresh impulse from JEREMIAH THOMPSON, ISAAC WRIGHT, and others, who conceived the idea of establishing a line of packets between New-York and Liverpool. This was at a period when the scales of commercial ascendancy was vibrating between New-York, Boston, Philadelphia, and other places. The packet ships of the staid New-York quaker turned the balance. Though only of 300 tons burden, and sailing but once a month, they had their regular day of departure, and the merchants of Charleston, Philadelphia, etc., found it convenient to avail themselves of this regular and stated channel, for communicating with their agents in England, ordering goods, etc. Those packets went on increasing in numbers and size until now; at the present day we have them building of 2000 tons, sailing every day, and running between New-York and every fifth-rate sea-port town in the United States, and to many foreign ports.

Thus an impulse was given to the prosperity of New-York; one enterprize begat another, until that city became the great commercial emporium and centre of exchange of the new world; and all these results are traceable to the use of the water-thermometer at sea.

Other causes, doubtless, have operated to take away from Charleston her relative commercial importance—but the primary cause was that discovery which removed Charleston from the way-side of commerce with Europe, and which placed her on the out-skirts of the great commercial thoroughfares, and away from the situation which she occupied.

In consequence of the improvement since made in navigation, ship building, etc., Lieut. MAURY remarked that a ship could now go from

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New-York to England, and back in less time than when Charleston was the half-way house, she could get to Charleston from London.

He therefore submitted whether this fact were not sufficient to turn the scales of commerce, and he claimed the fact to be due to the influence of the Gulf stream upon the course of trade, and the water-thermometer was the key to it all.

The fourth paper, was entitled

Observations on a remarkable exudation of Ice from the Stems of Vegetables, and on a singular protrusion of Icy columns from certain kinds of Earth during frosty weather; by JOHN LE CONTE, M.D., *Professor of Natural Philosophy and Chemistry, in the University of Georgia.*

IT is certainly a remarkable circumstance, that phenomena so striking as those forming the subject of this paper, have received so little attention from philosophers; and it is, perhaps, still more singular, that, hitherto, no attempts have been made at their explanation. STEPHEN ELLIOTT, in his "Sketch of the Botany of South-Carolina and Georgia," published in 1824, notices a remarkable protrusion of crystaline fibres of ice from the stems of the Conyza bifrons, (Vol. 2. p. 322.) SIR JOHN F. W. HERSCHEL published a short notice of a similar exudation of icy fringes occurring around thistle-stalks, and stumps of heliotropes, in the London and Edinburgh Philosophical Magazine, for 1833, p. 110, (3d Series, vol. 2, p. 110.) Professor S. P. RIGAUD, of Oxford, notices the occurrence of an analogous phenomenon on a recently built stone wall, in the succeeding number of the same journal, (3d Series, vol. 2, p. 190–1833.) As far as my researches extend, the above-mentioned notices—all of them very brief and imperfect—embrace all the observations hitherto made on these remarkable phenomena. Even the natural speculative tendency has been held in check by the extreme paucity of facts and observations; so that no explanation of them has been advanced.

For many years, my attention has been drawn to the remarkable deposition of ice around the stalks of certain plants, as well as to analagous phenomena exhibited by certain kinds of soil. During a visit to the sea-coast of Georgia, in the months of November and December, 1848, I had a very favorable opportunity of studying the phenomena as exhibited in vegetables. The plants in which I have

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